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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/361,458	07/27/1999	JONATHAN H. MEIGS	30-4590	5541

7590                    09/12/2003

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[REDACTED] EXAMINER

EASTHOM, KARL D

[REDACTED] ART UNIT      [REDACTED] PAPER NUMBER

2832

DATE MAILED: 09/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application N .	Applicant(s)
09/361,458	MEIGS ET AL.
Examiner	Art Unit
Karl D Easthom	2832

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

1) Responsive to communication(s) filed on 28 July 2003.

2a) This action is **FINAL**.      2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

4) Claim(s) 11 and 30-36 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 11 and 30-36 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
 If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some \* c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____	6) <input type="checkbox"/> Other: _____

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 11 and 30-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carbin in view of, or with, Grazen and Hunt. Carbin discloses the claimed invention except the alumina oxide and nickel particles. Grazen discloses nickel and alumina as a good conductor material (electrical contacts, electric relays) in the claimed range with the articles having good wear resistance, corrosion resistance, alloy strength, high temperature resistance, and a host of advantages at cols. 1-2.. Hunt discloses at col. 24, lines 24-67, the same mixture of alumina and nickel as a useful resistor in a circuit board similar to the resistor and circuit board of Carbin noted next. Carbin discloses that metals codeposited with nonmetals, similar to that of Grazen and Hunt, are typical of the prior art for use as resistors in circuit boards, citing US 4808967 at col. 4, lines 15-21, and teaches that deposition can occur on either the matte side or shiny side at col. 5, lines 5-32, thus suggesting that any resistive or conductive materials such as that of Grazen or Hunt are applicable for deposition on the shiny side. That is, Carbin teaches at the noted passage and see cols. 9-11 that there are only two choices for deposition, the shiny side or the matte side, with advantages for deposition on the shiny side including the ability to better etch the conductor layer - see top of col. 11 due to the deeper pits in the matte side.

Carbin teaches that the shiny side lacks adhesion to a substrate due to lack of roughness, and employs an adhesion layer on the shiny side prior to a subsequent metal deposition that creates roughness (that is transferred to the deposited metal layer -see col. 5, lines 50-57) for better adherence, suggesting claim 36. It would have been obvious in view of Grazen and Hunt to employ the known resistive materials suggested there in the circuit board of Carbin on the shiny side for the purpose of forming a known resistor composition having the superior properties suggested. and so that the copper layer can be etched more easily.

Assuming arguendo for the dependent claims that the process limitations render the product distinct (and if not then the required modifications are not required), for claims 31 and 33, the claimed temperature range is disclosed at col. 3, lines 50-75 of Grazen where the claimed temperature range is required for the materials employed so that would have been obvious. Grazen suggests and discloses the claimed particle size, g/l, and PH of claims 30-33 (after conversion of units from oz/gal for nickel) at col. 4, lines 50-75 chosen for the ability to circulate in the solution rendering that choice also obvious. For the density of alumina, the alumina additive is disclosed at Grazen col. 5, lines 25-35 as varied over a wide range depending on the desired result. The amount in g/l is further suggested in the examples at col. 4 Hunt teaches, and it is well known as evidenced by art in the record, that the relative amount of metal to additive varies the resistivity so that it would have been obvious to employ any range to obtain any resistance.

3. Applicant's arguments filed 7/28/03 have been fully considered but they are moot

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl Easthom whose telephone number is (703) 308-3306. The examiner can normally be reached on M-Th from 5:30AM to 4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad, can be reached on (703) 308-7619. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



KARL D. EASTHOM  
PRIMARY EXAMINER